W. RICHTER.

GAS PIPE MANIPULATING APPARATUS.

APPLICATION FILED JUNE 21, 1921.

1,427,699.

Patented Aug. 29, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

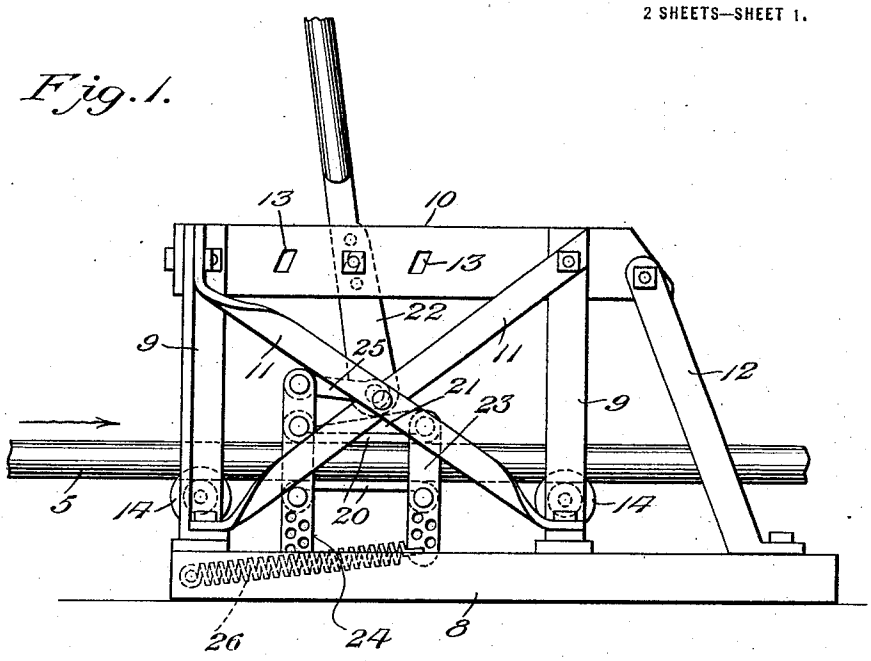
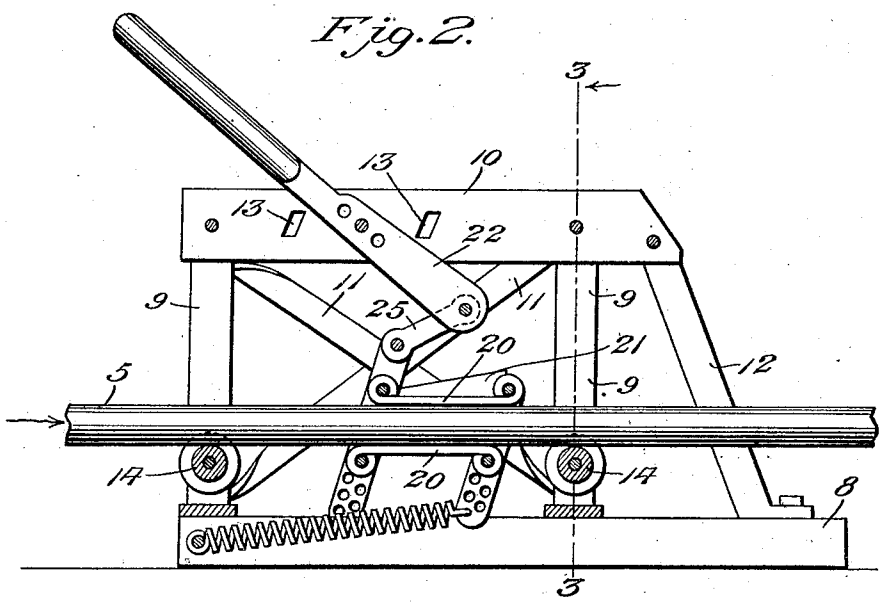


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

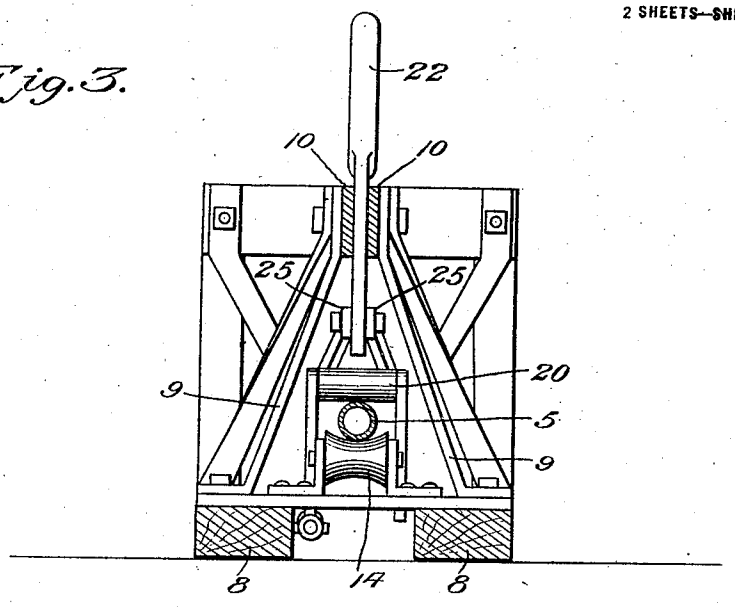
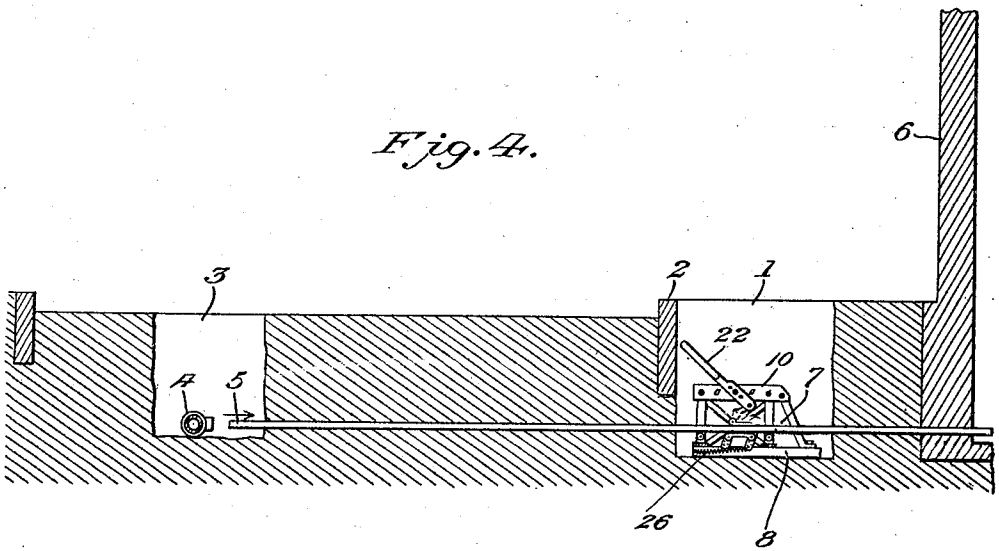


Fig. 4.



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GAS-PIPE-MANIPULATING APPARATUS.

1,427,699. Specification of Letters Patent. Patented Aug. 29, 1922.

Application filed June 21, 1921. Serial No. 479,297.

To all whom it may concern:

Be it known that I, WILLIAM RICHTER, a citizen of the United States, residing at Leavenworth, in the county of Leavenworth and State of Kansas, have invented new and useful Improvements in Gas-Pipe-Manipulating Apparatus, of which the following is a specification.

The object of my present invention is the provision of an apparatus for manipulating gas pipe—i. e., pulling, pushing and raising the same, and this more particularly while the pipe is in the ground.

The apparatus is designed to quickly accomplish the purpose for which it is intended and is adapted to be operated to advantage with but little effort on the part of the operator.

To the attainment of the foregoing, the invention consists in the improvement as hereinafter described and definitely claimed.

In the accompanying drawings, forming part of this specification:—

Figure 1 is a side elevation of the apparatus constituting the best practical embodiment of my invention that I have as yet devised.

Figure 2 is a longitudinal vertical section of the same.

Figure 3 is a vertical transverse section of the apparatus, taken in the plane indicated by the line 3—3 of Figure 2.

Figure 4 is a longitudinal vertical view on a reduced scale showing the location of my novel apparatus when the same is put into use.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

By particular reference to Figure 4 it will be noted that in one use of my invention and the use for which the invention is primarily intended, the apparatus is placed in a hole 1 in the ground, at the opposite side of a line of curbing 2, with reference to a hole 3, dug in the street so as to uncover the connection between a gas main 4 and a service pipe 5 extending from the gas main to a house designated by 6. It frequently happens that the service pipe 5 must be removed because of some defect, and when this contingency arises, an operator working in the hole 3 separates in some suitable way one end of the service pipe 5 from the main 4. The operator also cuts the service pipe 5 in the hole 1, as indicated by 7, and then my novel apparatus is arranged in the hole 1 and the cut out section of the service pipe 5 is pulled through the medium of my novel apparatus toward the house, this serving to avert the necessity of digging an expensive trench crosswise of the street and extending from the main 4 to the point where the second cut in the service pipe 5 is made.

The main frame of my novel apparatus may be of any material and of any type compatible with the purpose of the invention. I prefer, however, to make the said frame of iron and to have it comprise among other elements base bars 8, arranged in parallelism with each other. In addition to the said base bars 8, the frame comprises uprights 9 fixed to and rising from the base bars 8, upper longitudinal portions 10 carried between and fixed with respect to the uprights 9, and appropriate braces 11. The inner uprights 9 are arranged a considerable distance from the ends of the base bars 8 so that the frame will have a long base, and braces 12 are interposed between the outer ends of the extended portions of the bars 8 and the upper portion of the frame as illustrated. The upper bars 10 are spaced apart for the play of the hand lever of the apparatus, and are provided with sets of transverse apertures 13 in order that the fulcrum of the said lever may be placed at various points in the length of the apparatus.

Appropriately mounted in the main frame and spaced apart and arranged transversely of the lower portion of the said main frame are rollers 14 which are preferably reduced from their ends toward their transverse centers and are designed to support a pipe section during the pulling or pushing thereof.

The pipe is made to extend between two flat pieces 20 of iron, 6 inches long, and 2½ inches wide; these pieces having bolt holes at either end. The top piece has a steel wedge 21 on top, shaped so that if the lever 22 is pulled backward, it slides upon the wedge. The lower end of the lever is rounded. Pivotally connected to the plates 20 are bars 23 and 24, and the bars 24 are extended above the plate 20 and are connected through the medium of links 25 with the lower arm of the lever. The lower portions of the bars 23 and 24 are each provided with a multiplicity of apertures for the adjustable connection of the lower plate 20 to accommodate pipes of various diameters, and interposed between and connected to the lower portion of one of

the bars 23 and the base bars 8 is a retractile spring 26. Manifestly when the lever 22 is rocked by the operator, the plates or jaws 20 will grip the pipe incident to movement of the lower arm of the lever 22 in one direction, and will be disengaged and moved loosely on the pipe when the lower arm of the lever is moved in the opposite direction.

In the practical operation of my novel apparatus in the relation shown in Figure 4, the apparatus enables an operator to pull out an old pipe section, and when the apparatus is reversed to push in a new pipe section. It will also be understood that when the apparatus is arranged with its front end over a pump jack, it may be used to advantage to pull a pump pipe out of a well, and this expeditiously and with but little effort on the part of the operator.

Notwithstanding the practical advantages ascribed to my novel apparatus it will be appreciated that the apparatus embodies but a few parts and is susceptible of being inexpensively manufactured. It will also be appreciated that no delicate parts are embodied in the apparatus, such as are likely to get out of order after a short period of use.

I have entered into a detailed description of the construction and relative arrangement of parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear and exact understanding of the said embodiment. I do not desire, however, to be understood as confining myself to the said specific construction and relative arrangement of parts inasmuch as in the future practice of the invention various changes and modifications may be made such as fall within the scope of my invention as defined in my appended claim.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:—

An apparatus for pushing and pulling pipes, comprising a main frame having base bars, uprights, upper spaced portions with transverse apertures and braces, and also comprising extensions on the base bars and braces between said extensions and the upper portion of the frame at one end of said portion, anti-friction rollers mounted in the lower portion of the frame and arranged in spaced relation, and a lever fulcrumed on the upper portion of the frame and equipped at its lower portion with means constructed and arranged to grip a pipe on movement of the lever in one direction and to release the pipe on movement of the lever in the opposite direction; the said means comprising jaws or plates, bars connected thereto, a connection between one pair of bars and the lever, and a retractile spring between the other pair of bars and the frame.

In testimony whereof I affix my signature.

WILLIAM RICHTER.